AMENDMENTS TO THE CLAIMS:

Please cancel claims 1-31, 33-38, 41-80, 83 and 84 without prejudice or disclaimer.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-84. (Canceled)

85. (New) A flexible sheet structure comprising:

a plurality of modules;

said plurality of modules being connected together so that each module of said plurality of modules is capable of rotating about first and second axes with respect to a neighboring module of said plurality of modules to which it is connected, said first axis being parallel to the plane of the sheet when laid flat and said second axis being orthogonal to the plane of the sheet when laid flat;

wherein a density of selectable portions of said sheet is variable so that said sheet may be smoothly molded around complex shapes.

86. (New) A flexible sheet structure according to claim 1, wherein a module of said plurality of modules can rotate relative to a neighboring module of said plurality of modules to which said module is connected about said axis parallel to the plane of the sheet when laid flat through at least the full range of -10° to +10°.

87. (New) A flexible sheet structure according to claim 86, wherein said rotation is at least through the full range of -20° to +20°.

88. (New) A flexible sheet structure according to claim 87, wherein a module of said plurality of modules can rotate relative to a neighboring module of said plurality of modules to

which said module is connected about said axis parallel to the plane of the sheet when laid flat by between no more than -60° and no more than +60°.

89. (New) A flexible sheet structure according to claim 88, wherein said rotation is between no more than -30° and no more than +30°.

90. (New) A flexible sheet structure according to claim 85, wherein a module of said plurality of modules can rotate relative to a neighboring module of said plurality of modules to which said module is connected about said axis orthogonal to the plane of the sheet when laid flat through at least the full range of -10° to +10°.

91. (New) A flexible sheet structure according to claim 90, wherein said rotation is at least through the full range of -30° to +30°.

92. (New) A flexible sheet structure according to claim 91, wherein said rotation is at least through the full range of -80° to +80°.

93. (New) A flexible sheet structure according to claim 85, wherein each module of said plurality of modules has a plurality of nodes and at least one of said modules has each of its plurality of nodes connected to a node of a different neighboring module.

94. (New) A flexible sheet structure according to claim 93, wherein each module of said plurality of modules has only 3 nodes.

95. (New) A flexible sheet structure according to claim 94, wherein each node is located at an end of an arm.

96. (New) A flexible sheet structure according to claim 95, wherein each arm of each module lies parallel to the plane of the sheet when laid flat.

97. (New) A flexible sheet structure according to claim 93, wherein each module has 4 and only 4 nodes.

98. (New) A flexible sheet structure according to claim 93, wherein each connection between respective ones of said plurality of modules is a single joint that allows both said rotation orthogonal to the plane of the sheet when laid flat and said rotation parallel to the plane of the sheet when laid flat simultaneously such that rotation about a single axis intermediate said orthogonal and parallel axes is possible.

99. (New) A flexible sheet structure according to claim 98, wherein said single joint has a neutral axis oriented at substantially 90° to the plane of the sheet when laid flat.

100. (New) A flexible sheet structure according to claim 98, wherein said single joint has a neutral axis oriented at an angle to the plane of the sheet when laid flat.

101. (New) A flexible sheet structure according to claim 98, wherein said single joint has a neutral axis oriented substantially parallel to the plane of the sheet when laid flat.

102. (New) A flexible sheet structure according to claim 98, wherein said single joint is a ball and socket joint.

103. (New) A flexible sheet structure according to claim 102, wherein said ball/socket joint is a double ended ball/socket joint comprising two balls and two sockets.

104. (New) A flexible sheet structure according to claim 93, wherein each module of said plurality of modules is connected to a plurality of neighboring modules of said plurality of modules.

105. (New) A flexible sheet structure according to claim 85, wherein a module can rotate relative to a neighboring module to which it is directly or indirectly connected about said axis parallel to the plane of the sheet when laid flat by between at least the full range of -90° to +90°.

106. (New) A flexible sheet structure according to claim 105, wherein a module can rotate relative to a neighboring module to which it is directly or indirectly connected about said axis parallel to the plane of the sheet when laid flat by between at least the full range of -180° to +180°.

107. (New) A flexible sheet structure according to claim 105, wherein a module can rotate relative to a neighboring module to which it is directly or indirectly connected about said axis orthogonal to the plane of the sheet when laid flat by at least between -100° and +100°.

108. (New) A flexible sheet structure according to claim 107, wherein a module can rotate relative to a neighboring module to which it is directly or indirectly connected about said axis parallel to the plane of the sheet when laid flat by between no more than -120° and no more than +120°.

109. (New) A flexible sheet structure according to claim 85, wherein at least one module of said sheet is connected to a neighboring module via a linking component.

110. (New) A flexible sheet structure according to claim 109, wherein said at least one module is connected to said linking component by a joint which allows relative rotation between the module and linking component about said axis parallel to the plane of the sheet when laid flat.

111. (New) A flexible sheet structure according to claim 110, wherein said linking component comprises two members connected together by a joint which allows relative rotation between the two members about an axis orthogonal to the plane of the sheet when laid flat.

112. (New) A flexible sheet structure according to claim 109, wherein each module is connected to a linking component by a joint which allows relative rotation between the module and the linking component about said axis orthogonal to the plane of the sheet when laid flat.

113. (New) A flexible sheet structure according to claim 109, wherein said linking component is a single linear member having a ball at each end thereof.

114. (New) A flexible sheet structure according to claim 85, wherein said plurality of modules are connected together so as to form a regular pattern of closed loops in said plane.

115. (New) A flexible sheet structure according to claim 114, wherein the loops can close in to reduce in area while the sheet remains flat due to relative rotation of said plurality of modules about said axis orthogonal to the plane of the sheet when laid flat.

116. (New) A flexible sheet structure according to claim 85, wherein the effective area of the whole or part of the sheet can be varied while the sheet remains flat.

117. (New) A flexible sheet structure according to claim 85, wherein an area of said sheet can be reduced to 80% or less of its original size, while remaining flat.

118. (New) A flexible sheet structure according to claim 85, wherein the area of said sheet can be reduced to 60% or less of its original size, while remaining flat.

119. (New) A flexible sheet structure according to claim 85, wherein the area of said sheet can be reduced to 40% or less of its original size, while remaining flat.

120. (New) A flexible sheet structure according to claim 85, wherein each module of said plurality of modules is capable of rotating relative to a neighboring module of said plurality of modules to which it is connected about each of the mutually orthogonal axes that lie in the plane of the sheet when laid flat.

121. (New) A flexible sheet structure according to claim 85, wherein each module of said plurality of modules is constructed of substantially rigid and non-flexible plastics material.

122. (New) A flexible sheet structure according to claim 85, wherein the connections between said plurality of modules are arranged such that pure relative translation between neighboring modules of said plurality of modules is not possible.

123. (New) A flexible sheet structure according to claim 85, wherein each module of said plurality of modules is substantially similar in shape to the other modules.

124. (New) A flexible sheet structure according to claim 85, further comprising additional material applied so as to give a smooth outer surface for said sheet structure.

125. (New) A flexible sheet structure according to claim 124, wherein said additional material is a thin covering material adhered to the plurality of modules.

126. (New) A flexible sheet structure according to claim 124, wherein said additional material is applied as a fluid so as to encapsulate the plurality of modules.

127. (New) A module for use in the flexible sheet structure of claim 85.

128. (New) A spinal brace comprising the flexible sheet structure of claim 85.

129. (New) A flexible sheet structure comprising:

a plurality of modules connected together, at least one of said modules being connected to another of said modules by a multiple degree of freedom joint that has a neutral axis oriented substantially at 90° to the plane of the sheet when laid flat;

wherein a density of selectable portions of said sheet is variable so that said sheet may be smoothly molded around complex shapes.

130. (New) A flexible sheet structure according to claim 129, wherein each of said modules is connected to another of said modules by a multiple degree of freedom joint that has a neutral axis oriented substantially at 90° to the plane of the sheet when laid flat.

131. (New) A flexible sheet structure according to claim 129, wherein an area of said sheet can be reduced to 80% or less of its original size, while remaining flat.

132. (New) A flexible sheet structure comprising:

a plurality of modules connected together, each of said modules having first, second and third arms, each of said arms being regularly spaced from the other two said arms, each of said arms being connected to an arm of a neighboring one of said modules so that each of said modules is capable of rotating with respect to its neighboring module of said plurality of modules about an axis orthogonal to the plane of the sheet when laid flat;

wherein a density of selectable portions of said sheet is variable so that said sheet may be smoothly molded around complex shapes.

133. (New) A flexible sheet structure according to claim 132, wherein an area of said sheet can be reduced to 80% or less of its original size, while remaining flat.

134. (New) A flexible street structure comprising:

a plurality of modules:

said plurality of modules being connected together so as to allow an effective area of the sheet to be varied while the sheet remains flat and to allow out of plane movement so that the sheet may be smoothly conformed around complex shapes;

wherein a density of selectable portions of said sheet is variable so that said sheet may be smoothly molded around complex shapes.

135. (New) A flexible sheet structure according to claim 134, wherein an area of said sheet can be reduced to 80% or less of its original size, while remaining flat.

136. (New) A module for use in a flexible sheet structure, said module having arms with each arm comprising one half of a multiple degree of freedom joint, for connection with the

other half of the multiple degree of freedom joint located on an arm of a neighboring module in the sheet, said multiple degree of freedom joint half being oriented such that a resulting multiple degree of freedom joint will have a neutral axis oriented out of a plane of the sheet when flat;

wherein the module is constructed such that when connected with a neighboring module to define said sheet, a density of selectable portions of said sheet is variable so that said sheet may be smoothly molded around complex shapes.

137. (New) A module according to claim 136, wherein said multiple degree of freedom joint half is oriented at 90° to a major plane of the module.

138. (New) A module according to claim 137, wherein said multiple degree of freedom joint half is one of a ball and a socket.

139. (New) A lockable articulated structure comprising:

a plurality of modules connected together so that said modules are selectively moveable with respect to one another;

at least one connection between two of said modules comprising a locking material capable of assuming at least two states, said at least two states including a first state which allows relative movement of said modules and a second state which at least substantially prevents such movement, a transition between said two states being accomplished by a selective introduction of energy to said locking material;

wherein a density of selectable portions of said structure is variable so that said structure may be smoothly molded around complex shapes.

140. (New) A structure according to claim 139, wherein said selective movement is rotation.

141. (New) A structure according to claim 140, wherein said rotation is about more than one axis.

142. (New) A structure according to claim 139, wherein said first state is a softer state than said second state.

143. (New) A structure according to claim 142, wherein said second state is a frozen state.

144. (New) A structure according to claim 143, wherein said transition is from said frozen state to said softer state and is accomplished by providing heat to said locking material.

145. (New) A structure according to claim 144, wherein said locking material is susceptible of being heated by microwave energy to a greater extent than the material of the articulated structure such that heat may be provided to said locking material by subjecting the articulated structure to microwave radiation.

146. (New) A structure according to claim 139, wherein said first state is an expanded state and said second state is a compressed state.

147. (New) A structure according to claim 146, wherein said transition is from said compressed state to said expanded state and is accomplished by providing heat or electricity to said locking material.

148. (New) A structure according to claim 139, wherein said first state is a compressed state and said second state is an expanded state.

149. (New) A structure according to claim 139, wherein said first state is a non-adhered state and said second state is an adhered state.

150. (New) A structure according to claim 149, wherein said transition is from said non-adhered state to said adhered state and is accomplished by providing heat, UV radiation or electricity to said connection.

151. (New) A structure according to claim 139, wherein said first state is a pressurized state and said second state is an unpressurized or less pressurized state.

152. (New) A structure according to claim 151, wherein said transition is from said unpressurized or less pressurized state to said pressurized state and is accomplished by pumping a hydraulic or pneumatic fluid through said connection.

153. (New) A structure according to claim 139, wherein said transition is reversible.

154. (New) A structure according to claim 139, wherein said connection is a ball and socket joint and said locking material is disposed at least partly around the ball.

155. (New) A structure according to claim 154, wherein at least one of said ball and said socket has a flat portion, and said locking material is located adjacent said flat portion.

156. (New) A structure according to claim 154, wherein there are provided topographical features that prevent rotation about a neutral axis of said ball and socket joint when said structure is locked.

157. (New) A structure according to claim 156, wherein said ball or socket has at least one groove-shaped topographical feature in which said locking material is located.

158. (New) A structure according to claim 139, wherein said connection is a pivot comprising a shaft part and an annular part.

159. (New) A structure according to claim 158, wherein said locking material is located between said shaft part and said annular part.

160. (New) A structure according to claim 159, wherein said shaft or annular part has a non-cylindrical face and said locking material is located adjacent said face.

161. (New) A structure according to claim 139, wherein said material is a thermoplastic material.

162. (New) A structure according to claim 139, wherein said material is a eutectic material.

163. (New) A structure according to claim 139, wherein said material is a thermosetting material.

164. (New) A structure according to claim 139, where said material is a polymer.

165. (New) A structure according to claim 139, wherein said material is a thixotrophic fluid or a rheopectic fluid so as to provide differing amounts of effective viscosity according to the level of force acting on the structure.

166. (New) A structure according to claim 139, wherein an area of said sheet can be reduced to 80% or less of its original size, while remaining flat.

167. (New) A flexible sheet structure comprising the lockable articulated structure of claim 139.